



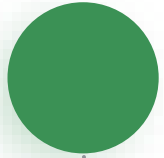
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Preliminary: Greenhouse Gas Inventory Report

Sustainability Committee | June 11, 2025

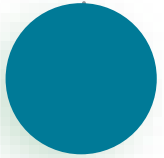
Greenhouse Gas

Scientific Background



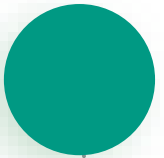
Atmospheric Impacts

Burning of fuels releases carbon dioxide and other greenhouse gases into the atmosphere



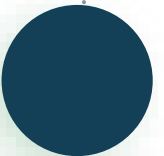
Greenhouse effect

Increases in greenhouse gases cause the atmosphere to trap heat



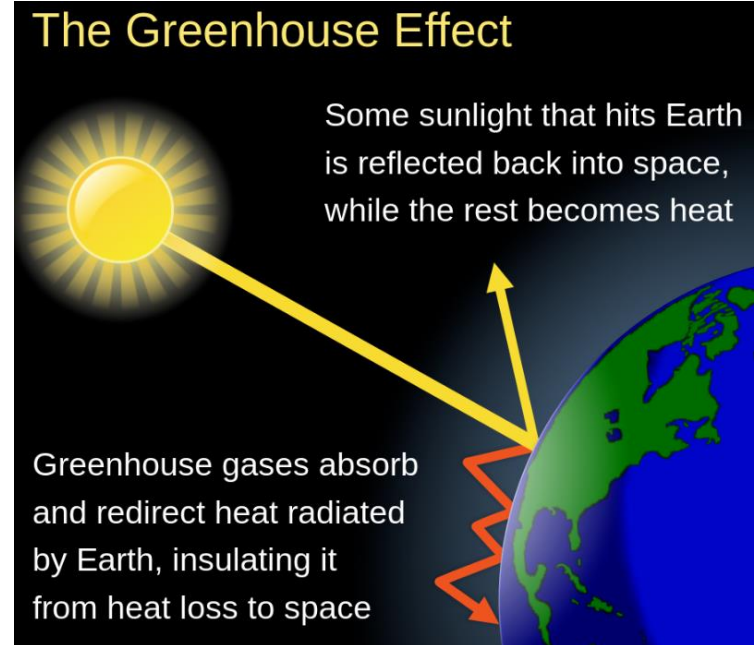
Greenhouse effect cont.

Explains why Venus is hotter than Mercury even though it is further from the Sun

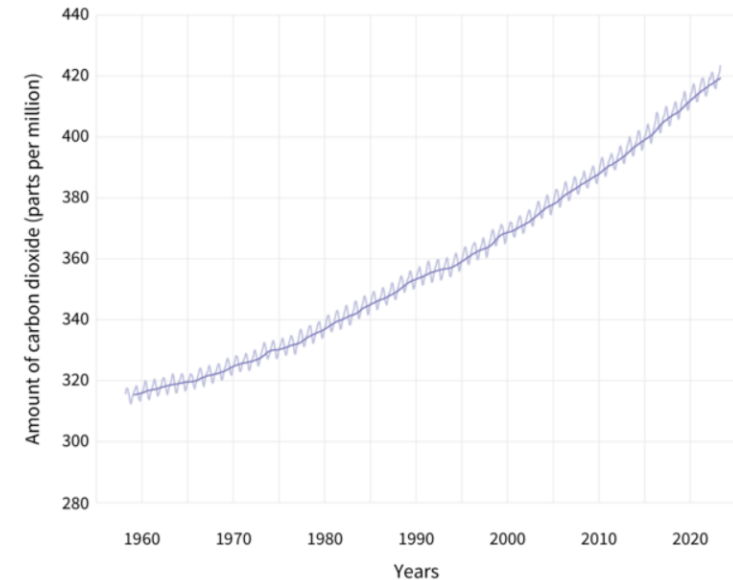


Increased atmospheric carbon dioxide

Responsible for impacts to the climate system



ATMOSPHERIC CARBON DIOXIDE





Greenhouse Gas Inventory

Background

- 1** Calculates the “carbon footprint” of the City
- 2** Includes emissions associated with driving, electricity and natural gas usage, waste, and more
- 3** Accounts for other greenhouse gases such as methane and nitrous oxide
- 4** Software is utilized for consistency in calculations

Example Calculation

Electricity Usage

Residential

210,895,015 kWh



Grid Emission Factors

Carbon Dioxide: 738 lbs./MWh

Methane: 43 lbs./GWh

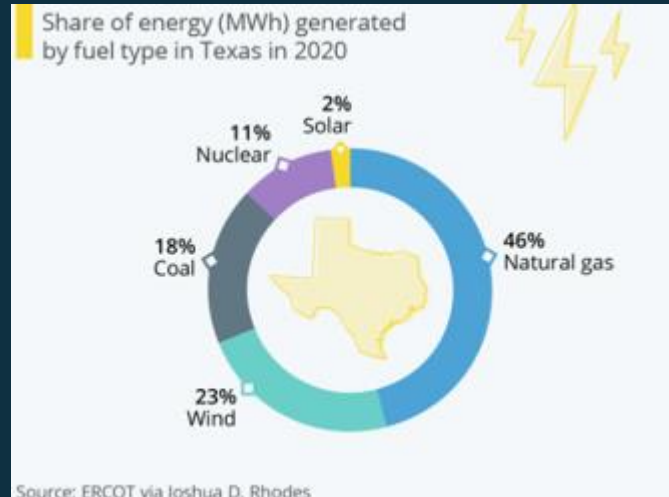
Nitrous Oxide: 6 lbs./GWh



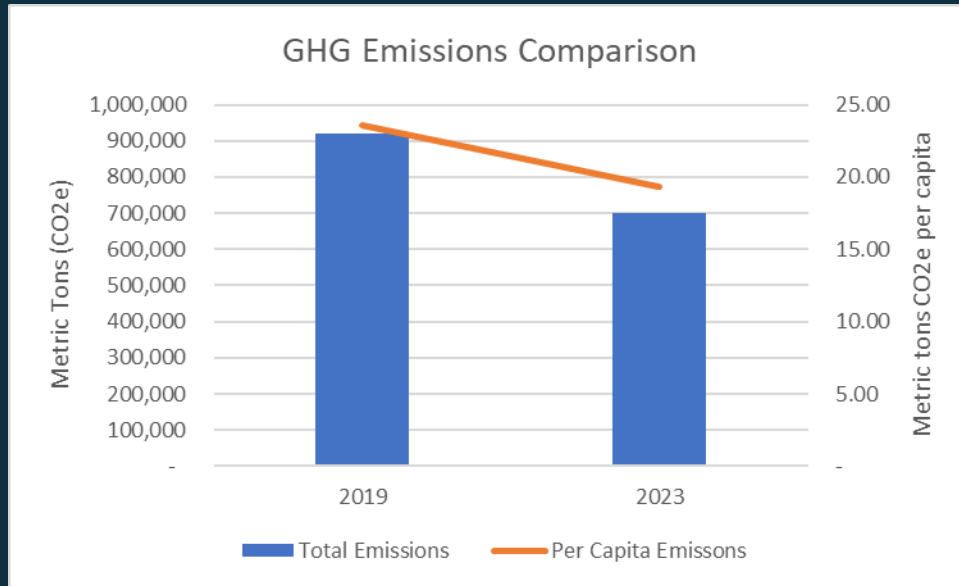
Electricity Emissions

Residential

70,638 Metric Tons of
Carbon Dioxide
Equivalent (MTCO_{2e})



Community Inventory Results

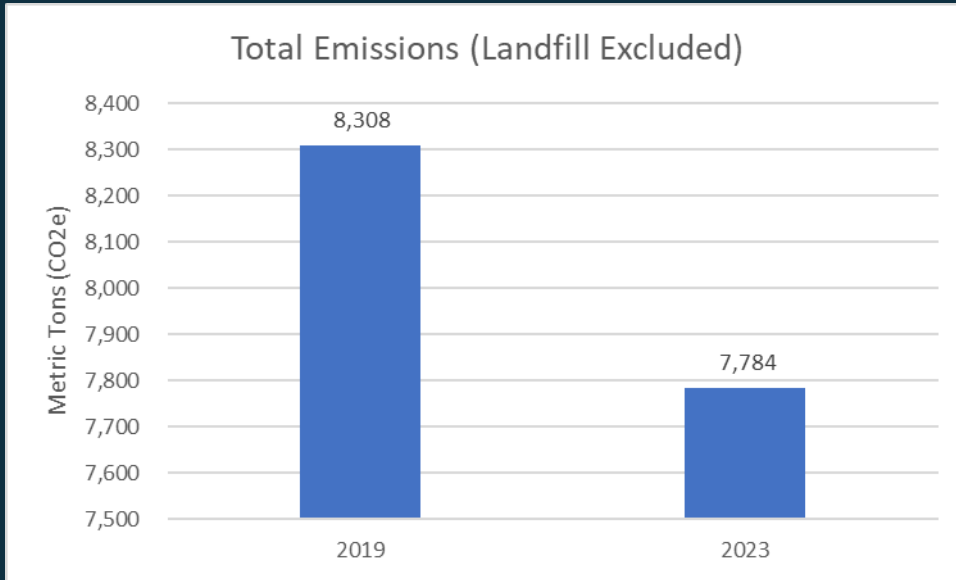


Highlights

- Emissions decreased by 23.8% from 2019
- Significant emissions reductions are associated with more efficient vehicles and increased renewables on grid electricity

Sector	2019	2023	Increase/Decrease	Percent Change
Residential Energy	92,890	93,580	690	0.7%
Commercial Energy	269,315	225,082	(44,233)	-16.4%
Industrial Energy	22,458	16,257	(6,201)	-27.6%
Transportation	488,886	317,269	(171,617)	-35.1%
Solid Waste	41,753	44,860	3,107	7.4%
Water & Wastewater	3,155	2,327	(828)	-26.2%
Process and Fugitive Emissions	1,837	1,513	(324)	-17.6%
Total	920,294	700,888	(219,406)	-23.8%

Municipal Operations Inventory Results



Highlights

- Landfill emissions were removed for comparison due to scale
 - Accounts for over 90% of total emissions
- Emissions decreased by 6.3% from 2019
- Waste Generation at City Facilities likely increased due to more complete data

Municipal Operations (Landfill Excluded)				
Sector	2019	2023	Increase/Decrease	Percent Change
Buildings, Facilities, Lighting	5,553	4,828	(725)	-13.1%
Vehicle Fleet	1,680	1,550	(130)	-7.7%
Employee Commute	893	1,009	116	13.0%
City Waste Generation	91	320	229	251.3%
Water & Wastewater Treatment Facilities	79	63	(16)	-20.3%
Process & Fugitive Emissions	12	14	2	16.7%
Total	8,308	7,784	(524)	-6.3%

Questions



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